

ABSTRACT OF THE DISCLOSURE

Disclosed a local multipoint distribution system (LMDS) and method of communicating ATM data on the LMDS that establishes a virtual circuit using a head-end unit to allow a bidirectional communication on ATM network and provide a medium access control(MAC) protocol by the head-end unit to perform multiplexing/demultiplexing and routing operations for data to be transmitted or received. The local multipoint distribution system comprising: a central office unit for multiplexing or demultiplexing an inputted data stream; a head-end unit for modulating downstream data of ATM cell structure provided from the central office unit, or demodulating an inputted upstream data and forwarding the central office unit; and a hub outdoor unit for converting the downstream data from the head-end unit with low frequency and transmitting to corresponding user application, or converting the upstream data received from the user application with high frequency and forwarding to the head-end unit, wherein, the central office unit or the head-end unit establish a virtual channel between the central office unit and the head-end unit to enable bidirectional communication in ATM network, and provides MAC protocol and routes a received data to a corresponding destination by multiplexing or demultiplexing the data.